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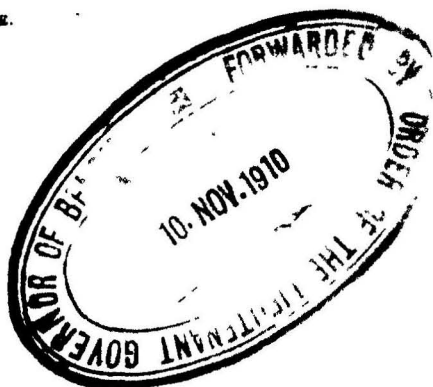
BENGAL GAZETTEERS.

FEUDATORY STATES OF ORISSA.

BY

L. E. B. COBDEN-RAMSAY,

INDIAN CIVIL SERVICE.



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PREFACE.

I HAVE much pleasure in acknowledging the valuable assistance rendered by the Chiefs of the States of Mayūr-bhanj and Dhenkānāl, and by the Superintendents of the Keonjhar and Nayāgarh States, in the preparation of the articles on their States. To Mr. F. D. Whiffin, Honorary Magistrate of the Gāngpur State, I am indebted for valuable information on the subject of the Fauna of the States. A considerable amount of the information concerning "The People" in the general portion of this volume is taken from notes prepared for the Ethnographic Survey of the Central Provinces. The description of the Gāngpur and Bonai States has been largely reproduced from Sir William Hunter's Statistical Account of those States.

L. C.R.

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OF THE

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CHAPTER I.

PHYSICAL ASPECTS.

THE Feudatory States of Orissa consist of a group of 24 dependent territories attached to the Division of Orissa, and comprise the following States: Athgarh, Athmallik, Bāmra, Barāmbā, Baud, Bonai, Daspallā, Dhenkānāl, Gāngpur, Hindol, Kālāhandi, Keonjhar, Khandparā, Mayūrbhanj, Narsinghpur, Nayāgarh, Nilgiri, Pāl Laharā, Patnā, Rairākhōl, Ranpur, Sonpur, Tāloher and Tigiriā: of these the States of Bāmra, Kālāhandi, Patnā, Rairākhōl and Sonpur were formerly attached to the Chhattiagarh Division of the Central Provinces; Bonai and Gāngpur were formerly attached to the Chotā Nāgpur Division and the remaining States formerly known as the Tributary Mahāls formed part of Orissa. They lie between 22° 34' and 19° 2' N., and 82° 32' and 87° 11' E., and have a population of 3,173,395 and an area of 28,125 square miles. They are bounded on the north by the State of Jashpur in the Central Provinces, the districts of Rānchi, Singhbhūm and Midnapore; on the east by the districts of Balasore, Cuttack and Puri; on the south by the districts of Ganjam and Vizagapatam in the Madras Presidency and Khondmāle (Angul); and on the west by the Raipur district and Raigarh State of the Central Provinces and the district of Sambalpur in the Bengal Presidency and Vizagapatam district in the Madras

GENERAL
DESCRIPTION.

Boundaries.

Presidency. The district of Angul is situated practically in the centre of this block of country and was formerly one of the group of States known as the Tributary States of Orissa : on the southern border and conterminous with the border of the Ganjam district are the Khondmals, a subdivision of the Angul district.

Configura-
tion.

The States form a succession of hill ranges rolling backwards towards Central India. They form three watersheds from south to north, with fine valleys between, down which pour the three great rivers of the inner tableland. The southernmost is the valley of the Mahānadi, spreading out into fertile plains watered by a thousand mountain streams. At the Barmūl pass, the river winds round magnificently wooded hills, from 1,500 to 2,500 feet high. From the north bank of the Mahānadi, the hill ranges tower into a fine watershed, from 2,000 to 2,500 feet high, forming the boundary of the States of Narsinghpur and Barāmbā. On the other side, they slope down upon the States of Hindol and Dhenkānāl, supplying countless little feeders to the Brāhmanī, which occupies the second of the three valleys. From the north bank of the Brāhmanī river, the hills again roll back in magnificent ranges, till they rise into the Keonjhar watershed, with peaks from 2,500 to 3,500 feet high, culminating in Malayagiri, 3,895 feet high, in the State of Pāl Laharā. This watershed, in turn, slopes down into the third valley, that of the Baitarani, from whose eastern or left bank rise the mountains of Mayūrbhanj, heaped upon each other in noble masses of rock, from 3,000 to nearly 4,000 feet high, sending countless tributaries to the Baitarani on the south, and pouring down the waters of the Burābalang, with the feeders of the Subarnarekhā, on the north. The peaks are densely wooded to the summit, and, except at the regular passes, are inaccessible to beasts of burden. The intermediate valleys yield rich crops in return for negligent cultivation, and a vast quantity of land might be reclaimed on their outskirts and lower slopes. Cultivation is, however, rapidly extending in all the States, owing to improved means of communication and to the pressure of population in the adjoining British districts.

The natural beauties of the country are exceedingly fine : vast ranges of forest and tree-clad hills and mountain ranges alternate with well-watered valleys gleaming bright in the sun, with green waving crops of paddy, or in the winter season, with brilliant yellow crops of *surguja* contrasting brilliantly with the deep green foliage of the forest. In the open plains along the valleys of the large rivers miles of highly cultivated lands stretch out before the eye, shut in on the horizon by lofty peaks

and forest-clad ranges. In the wild hill tracts of Mayūrbhanj, Keonjhar, Bonai, Kalāhandi and at Barmūl in Daspallā the soft beauty of the hill-clad ranges is relieved by wild precipitous bluffs scored and seamed by the storms of ages: in the rains raging torrents flashing for miles in the sunlight hurl themselves in fine waterfalls to the slopes below: the finest of these waterfalls drops over the sheer southern face of the Ohheliātokā range (3,308 feet) in Bonai. In the highlands of Kalāhandi, Keonjhar, Mayūrbhanj and Bonai clear pellucid hillstreams flow perennially, babbling over stones and rushing in tinkling waterfalls between grass-clad banks and sedgy shores, shaded by towering trees: many are the deep silent pools with the banks fringed with masses of white lilies, and the silence broken only by the gentle gurgle of the stream as it slowly trickles from the pools or by the splash of some rising fish: here the kingfisher darts to and fro in all his glory and birds of every hue imaginable brighten the scene: in the rains these streams become wild tearing torrents sweeping all before them. The hill area, or *dangarā* as it is locally known in Kalāhandi, occupying 1,415 square miles, contains some of the finest scenery: the area is one vast mass of tangled hill ranges, the sides clad in the densest forest: this country is a plateau land averaging about 2,500 feet above sea level comprised of small valleys shut in on all sides by hills which rise as high as 4,000 feet and over: the tops of these ranges in several cases form fine plateau lands, averaging about 2 miles wide by 7 to 10 miles long: they are almost level, but generally run up to a small elevation at one end some 50 feet above the plateau which averages about 3,800 feet: these ranges are covered with long grass and are almost bare of trees and form the feeding grounds and sanctuary of all descriptions of game: the largest and finest of these ranges are the Kārāpāt range (3,981 feet) and Bafīāmālī, near the Kāshipur plateau: from Bafīāmālī (3,587 feet) a glorious view is obtained; as far as the eye or the glass can sweep vast billowing mountain ranges rise and fall and looking south are seen the peaks of Tikrigurā (3,683 feet) and Bankāsāmo (4,182 feet) in the Kalāhandi State and now the highest peak in Orissa: to the east on the horizon is seen the magnificent peak of Nimaigiri (4,972 feet) in the Ganjam district. In these hills of the *dangarā* area the splendid stream of the Indravatī takes its rise near Thuāmūl: it quickly gathers volume and even in February roars and rushes down its hilly course in seething cataracts in its short wild rush to the plains and the State of Bastar to join the Godāvari. It makes its way through the hill range which forms the southern

boundary of Kālāhandī; not far from the place where the Indrávātī flows south through this barrier the Hāti river rises on the northern slopes and flows due north in exactly the opposite direction.

**HILL
SYSTEM.**

The principal peaks are Bankāsāmo (4,182 feet), and the Karlāpāt plateau (3,981 feet), both in Kālāhandī; Malayagiri (3,895 feet) in the State of Pāl Laharā; Meghāsani (the seat of the clouds, 3,824 feet) in Mayūrbhanj; Tikrigurā (3,683 feet) in Kālāhandī; Mānkarnācha (3,639 feet) in Bonai; Baḥliāmāli (3,687 feet) in Kālāhandī; Bādāmgarh (3,525 feet), Kumritār (3,490 feet) both in Bonai; Gandhamardan (3,479 feet) in Keonjhar; Chheliātoka (3,308 feet) in Bonai; Thākuranī (3,003 feet) and Tomāk (2,577 feet) in Keonjhar; Pānohdhar (2,948 feet) in Athmallik; Goāldes (2,506 feet) in Daspallā; Suliya (2,239 feet) in Nayāgarh and Kapilās (2,098 feet) in Dhenkānāl.

**RIVER
SYSTEM.**

Mahānadi. The principal rivers are the Mahānadi, the Brāhmani, the Baitarani, the Burābalang, the Ang and the Tel. The Mahānadi enters the States of Orissa in the State of Sonpur, dividing that State into two portions; after a course of about 30 miles it enters the State of Baud forming the boundary between that State on the south, and Athmallik State on the north, it then divides the State of Daspallā which lies on either side of its banks: from Daspallā it forms the boundary of Khandparā on the south, and Narsinghpur, Barāmbā, Tigiriā and Athgarh on the north. In the State last named, it debouches through a narrow gorge at Narāj upon the Cuttack delta. It is everywhere navigable throughout the States and up to Sambalpur, by large flat-bottomed boats, and a considerable trade is carried on, though this has fallen off with the opening of the Bengal-Nāgpur Railway. The river would afford valuable facilities for navigation, but for the numerous rocks and sand-banks in its channel. The boatmen carry rakes and hoes, with which in the cold season they dredge a narrow passage just sufficient to let their crafts pass. When full, it is a magnificent river of great breadth and depth. Diamonds were occasionally found in the bed during its course through the Sonpur State, but of late years no stones have been found. It is liable to heavy floods, which from time to time cause serious damage to the river side villages in the Narsinghpur, Barāmbā, Tigiriā and Athgarh States. The most picturesque spot on the Mahānadi is the Barmūl gorge in the State of Daspallā. Its chief feeders in the States are—on its north or left bank, the Sāpuā in Athgarh, and the Dandātapā and Māno in Athmallik; on its south or right bank,

the Kusūmī, Kamāi, the Jorāmu, Hināmandā, Gānduni, Bolat, Sāiki, Bāgh, Mārini, Tel and Ang.

The Brāhmanī is formed by the confluence of the South Brāhmanī. Koel and Sankh at Pānposh, in the Nāgrā zamindāri of the Gāngpur State: after a course which is unnavigable owing to extensive rock barriers and rapids of about 14 miles through the Gāngpur State, it enters the State of Bonai and after a course of some 38 miles in that State, flows for a short distance through the Bāmra State and then entering the State of Tāloher passes through it and Dhenkānāl into Cuttaok district. Attempts have from time to time been made to float sleepers down the Brāhmanī, but unsuccessfully. It is navigable for a few months of the year as far as 4 miles below Tāloher, where there are some dangerous rocks. The confluence of the South Koel and Sankh is a spot of remarkable beauty and scantity: about half a mile below the junction of these two rivers a fine bridge on the Bengal-Nāgpur line spans the Brāhmanī. Common jasper is found in its bed and through Gāngpur and Bonai the local gold-washers (Jhorās) earn a small livelihood by washing gold from the bed. There are no feeder streams of any importance; hill streams all along its course force their waters into the Brāhmanī and probably the most important of these is the Kurādi stream in Bonai.

The Baitarani rises among the hills in the south-west of Baitarani. Keonjhar State and forms during part of its course the boundary between that State and the State of Mayūrbhanj; its chief affluent is the Sālandi which rises in Mayūrbhanj. In the dry season the Baitarani is navigable by small boats, but with difficulty, as far as Anandpur, a large trading village in Keonjhar on its north bank.

The Burābalang rises in Mayūrbhanj and, after receiving two tributaries, the Gangāhar and the Sunāi, passes into Balasore. Burā-balang.

The Tel enters the Kālāhandi State, from the north-west, and Tel. flowing north-east discharges itself into the Mahānadi, close to the town of Sonpur: it forms about half the length of the boundary between the States of Kālāhandi and Patnā and then through the rest of its course, forms the boundary between the States of Sonpur and Baud: in the rains bamboos and timber are floated down from as far up the stream as where it forms the boundary between Kālāhandi and Patnā: its chief affluents are the Hāti, Sundar, Rāul and Suktel.

The Hāti river rises in the high hill ranges of the Mahulpātnā Hsi. zamindāri at the very southernmost extremity of the State of Kālāhandi and flows due north, draining the open country of the State,

till it joins the Tel and the united streams flow down to the Mahānadi: the Hātī is liable to very sudden rises receiving as it does the water of countless streams from the highlands of the *dangarlā* area.

Ang. The Ang rises in the hills of the zamīndāri of Borāsambar in the Sambalpur district: for a short distance after its rise it flows in a northerly direction, but quickly swerves to the east and with a southerly tendency runs on to join the Mahānadi, between the village of Binkā and the town of Sonpur in the State of Sonpur: for a portion of its course it forms the northern boundary of the Patnā State with the State of Sonpur: though a river of considerable volume in the rains, it quickly dries up in the cold season.

GEOLOGY. The Orissa Division consists, geologically* as well as geographically, of two very distinct portions; the one, a belt of nearly flat country, from fifteen to fifty miles in breadth, extending along the coast, and the other, an undulating area, broken by ranges of hills, in the interior. The former is entirely of alluvial formations, the greater portion of its surface being probably composed of deposits from the great river Mahānadi, and the smaller streams, the Brāhmani and Baitarani. Near its western limit alone, a few hills of gneissose rock rise from the alluvial plain, especially between the Brāhmani and Mahānadi. The inland hill tract, which forms the area covered by the Feudatory States, is chiefly composed of rocks of very ancient date, so completely altered and crystallized by metamorphic action, that all traces of their original structure are lost, and any organic remains obliterated which they may originally have contained. The same rocks cover an enormous area in Eastern and Southern India, and are usually spoken of, in works on Indian geology, as the crystalline or metamorphic series.

Further exploration in this area will doubtless show the existence of beds belonging to other formations; but hitherto the only instance in which any considerable area is known to be occupied by rocks of later date than the metamorphics, is in the tract known as the Talcher coalfield, in the States of Talcher, Athmallik, Dhenkanāl and Rairākhōl. High up the Brāhmani valley a series of very slightly altered or unaltered rocks, comprising slates with jasper, quartzites, and schistose beds, occur in the State of Bonai and are believed to occupy portions of Keonjhar.

The greater portion of the Feudatory States have never been explored geologically, and the information procurable

* This account is taken from Sir W. Hunter's article on the Geology of the Tributary States of Orissa with corrections to data.

as to their character is most imperfect. In Mayūrbhanj the Chief has had a geological survey conducted over the greater portion of the State: the vast area of the Simlāpāl range of hills has, however, not been investigated: the results of this geological survey are set forth in detail in the article on the Mayūrbhanj State. It is possible that other coalfields may exist, though not probable. Up to 1874-75 even the Tāloher coalfield had only received, for the most part, a very hurried examination. Excluding the formations of which no accurate information has been obtained, such as the slates, quartzites, and jasper, to be found in Keonjhar and Bonai, the following is a list, in descending order, of the rock systems hitherto described as existing in Orissa:—(8) *Blown sands*. (7) *Alluvium*. *b. River delta deposits.* *a. Older alluvium of coast plains.* (6) *Laterite*. (5) *Cuttack or Athgarh sandstone*. (4) *Mahādeva or Pānchet sandstone and grit*. (3) *Dāmodar sandstone, shale, and coal*. (2) *Tāloher sandstone, shale, silt and boulder bed*. (1) *Metamorphic or crystalline rocks*.

The following is a brief description of the characters of each of these formations, as found in Orissa:—

(1) **METAMORPHIC OR CRYSTALLINE ROCKS.**—These consist of various forms of gneiss, mica-schist, hornblende-schist, quartzite, etc. True granite is found in the form of veins traversing the gneiss, and is of various forms, the most common being a highly crystalline variety, with but little mica, and passing into pegmatite, of the kind known as graphic granite. This granite is apparently, for the most part at least, of coterminous age with the metamorphism of the gneiss. But besides this, the gneiss itself frequently passes into a granitoid form, perfectly undistinguishable in blocks from granite; but which, when in place, is usually found to retain, every here and there, traces of its original lamination, and to pass by insensible degrees into a distinct laminated gneiss of the usual form.

Other prevalent forms are ordinary gneiss, composed of quartz, felspar, and mica; hornblendic gneiss in which the mica is replaced by hornblende, the latter mineral sometimes forming a very large proportion of the rock; the quartzose gneiss, in which the felspar and mica, or hornblende, are in very small proportion, and the quartz predominates. This gradually passes into quartzite, in which felspar and mica are either wanting, or occur only in very small quantities.

The above may be considered the prevailing forms of the crystalline rocks; but there are others of less frequent occurrence. Amongst these are diorite, amphibolite, syenite, and a magnesian

rock—a kind of potstone. These may all very possibly be of later date than most of the metamorphics, though the serpentine-like potstone appears to be fairly intercalated.

(2) TALCHER GROUP.—The lowest beds associated with the coal-bearing strata are themselves destitute of useful fuel, and well distinguished mineralogically from the Dāmodar or coal-bearing rocks. They were first separated from the overlying beds in Orissa and named after the State in which they were found. They consist, in the case of the Talcher coalfield, of blue nodular shale, fine buff or greenish sandstone, and extremely fine silt beds, often interstratified with sandstone more or less coarse in texture, in thin alternating laminae. The sandstones frequently contain felspar grains, which are usually undecomposed. In the sandstone and fine silty shale, rounded pebbles, and boulders of granite, gneiss, and other crystalline rocks abound, some of them as much as four or five feet in diameter. This remarkable formation is known as the boulder bed. It is peculiar to the Talcher group, and has been found in India wherever that group has been examined,—in the valleys of the Dāmodar, the Son, the Narbadā, and the Godāvari, as well as in that of the Brāhmanī.

Of this singular association of large blocks of stone in a fine matrix, but few other instances are known, the most remarkable one being that of the "boulder clay" of Great Britain and other countries, which is now considered by most geologists to be of glacial origin. The boulder bed of the Talcher group, however, differs entirely from the boulder clay. In the former the fine matrix is distinctly stratified, and the boulders are rounded, neither of which is the usual condition of the boulder clay.

(3) DĀMODAR GROUP.—Above the Talcher, or occasionally resting upon the metamorphic rocks, without the intervention of any other sedimentary beds, is found a series of sandstone and shale, with beds of coal. The sandstone is mostly a coarse grey and brown rock passing into grits. They are usually more or less felspathic, the felspar being decomposed and converted into clay, and are often ferruginous. Blue and carbonaceous shale, often more or less micaceous, and ferruginous shaly sandstone, are characteristic of this group. Fossil plants, chiefly consisting of ferns, such as *Glossopteris*, *Pecopteris* *Trizycia*, *Equisetaceæ* and *Calamites* and above all, peculiar stems divided into segments (*Vertebraria*), believed to be roots of unknown affinities, are frequently found. Most of the fossil species found, perhaps all, are characteristic of the Dāmodar formation.

The peculiar interest attaching to this group of rocks is, however, derived from its being the only one in which workable coal has

been found in the Peninsula of India. All the coals of Rāniganj and the other fields of the Dāmodar valley, as well as all those of the Narbadā valley, and of other parts of the Central Provinces, are in Dāmodar rocks. So far as they have hitherto been examined, the coals of Tālcher appear to be of inferior quality to those of Rāniganj, the Narbadā, and other localities. In the Himgir zamindāri of the Gāngpur State a coalfield has been located over an area of about 27 square miles and steps have been taken to work the coal. The coal-bearing strata of the Himgir zamindāri is equivalent to the Kāmthi group, which includes the Upper and Lower Dāmodars and should therefore be included in the Dāmodar and not in the Tālcher group.

(4) MAHADEVA GROUP.—Above the coal-bearing series in the eastern part of the Tālcher coalfield, a considerable thickness of coarse sandstone, grits, and conglomerates is found, quite different in character from the beds of the Tālcher and Dāmodar groups, and resting unconformably upon them. These rocks are usually coloured with various shades of brown, and are frequently very ferruginous. The separate beds composing them are massive, and not interrupted, as the Dāmodar sandstones frequently are, by partings of shale. They form hills of considerable size in the State of Rairākhhol.

It is by no means clear that these beds are the representatives of the group in the Narbadā valley, to which the name Mahādeva was first applied; but there is a general subdivision of the rocks throughout the greater portion of the Indian coalfields into three principal groups. To the higher of these, the term Mahādeva has been given in the Narbadā valley, in Orissa, and Pānchet in Bengal.

(5) CUTTACK OR ATHGARH GROUP.—South-west of the town of Cuttack is a considerable area, reaching into the Athgarh State, occupied by grit, sandstone, and conglomerate, with one or more beds of white or pinkish clay. The beds are very similar in general character to those last described; but there is no evidence of any connection with them, and it appears at least as probable that the Cuttack rocks are of later date. No fossils have been found in these beds except some obscure impressions, apparently of vegetable origin, in the clays.

(6) LATERITE.—The laterite of Orissa is evidently of detrital origin and consists essentially of small pisolitic nodules, chiefly composed of hydrated oxide of iron (brown hæmatite) and coarse quartz sand, cemented together more or less perfectly into either a firm, though somewhat vesicular, rock, or into a less coherent mass, or at times remaining in a loose gravelly condition, and thus passing by various gradations into a sandy clay, with a few

pisolitic iron nodules. As a rule, the forms containing most iron are the most coherent, and *vice versa*. The more solid sorts are largely used as building stone, having the peculiar but important property of being softest when first cut, and of hardening greatly on exposure. Laterite is found all through the States of Orissa.

Beneath the detrital laterite, especially when a felspathic form of the metamorphic rocks occurs, the decomposed upper portion of the latter is frequently greatly impregnated with iron, and converted into a kind of lithomarge, which closely resembles the detrital laterite in appearance, and is employed for the same purposes. The massive form of laterite which caps many of the higher hills in Central India, and which is more compact than the detrital laterite, is not known to occur in Orissa.

Of the geology of the States of Pal Laharā, Narsinghpur, Barambā and Tigiriā, lying north of the Mahānadi, and of all the States south of the Mahānadi river, viz., Baud, Daspallā, Khandparā Nayāgarh, and Raupur, nothing definite is known. It is pretty certain that a large proportion of their area consists of metamorphic rocks, and it is possible that no others may be found.

Of Keonjhar and Nilgiri, only the edges bordering on Balasore district have been examined. Hindol has been traversed; portions of Dhenkānāl and Athmallik have been examined; whilst in Talcher and Athgarh a more general survey has been made, but still far from a complete or detailed one.

NILGIRI AND KEONJHAR.—The hills bordering on Balasore consist entirely of metamorphic rocks of various kinds. In the northern part of the range, gneiss is found, so granitic that the direction of the foliation can scarcely be ascertained. It appears to be nearly parallel with the escarpment of the range. Granite veins are scarce; but greenstone dykes, or pseudo-dykes, many of them of great size, abound, and most of them, if not all, appear to run parallel with the gneissic foliation. These facts render it probable that the dykes in question are really beds, so altered as to be perfectly crystalline. A kind of black magnesian rock, intermediate in composition between potstone and serpentine, approaching the former in appearance, but less greasy in texture, is quarried to some extent, chiefly for the manufacture of stone dishes, plates, and bowls. The stones are roughly cut into shape in the quarry, and finished, partly with tools and partly on a lathe, in the villages. The rock employed is found interfoliated with the gneiss in several places, and is quarried at the villages of Sāntrāgoriā and Gujādiā, a few miles south of Nilgiri, at a spot two or three miles from Jugjuri, and in scattered localities to the

north-west. A few miles south-west of Jugjuri, near Pār-parā, the granitoid rocks are replaced by a tough, hard, indistinctly crystalline hornblendic rock, resembling diorite, but exhibiting more foliation than is seen in the hills near Nilgiri. Still farther to the south-west, quartz schist appears in a well-foliated form, occasionally containing talc. A detached hill near Bākipur consists of this rock, and so does the whole south-west portion of the range as far as Ragadi, except in the immediate neighbourhood of the Sālandī river, where it leaves the hill. Here syenite occurs which forms a detached hill near Dārāpur. The southern portion of the range is free from the trap dykes which are so conspicuous to the north-east of Jugjuri. All the western portions of Keonjhar are unexplored, but the State is believed to contain good deposits of iron.

TALCHER AND ATHMALLIK.—*The Talcher coalfield.*—The basin of sedimentary rocks known as the Talcher coalfield is surrounded on all sides by metamorphics. This basin extends about seventy miles from west by north to east by south, with a general breadth of from fifteen to twenty miles, its eastern extremity at Khadakprasād on the Brāhmani river being nearly fifty miles north-west of Cuttack town. Its western limit is not far from Rāmpur, in the State of Rairākhōl, and it comprises nearly the whole of Talcher, and a considerable portion of Rairākhōl, with smaller parts of Athmallik, and Dhenkānāl. The western half of this field is chiefly occupied by the rocks already described as belonging to the Mahādeva group, conglomerate and coarse sandstone, which form hills of considerable height in a very wild, jungly, and thinly inhabited country. At the period when the Talcher coalfield was first examined, nothing whatever was known of the classification of rocks which has since been adopted by the Geological Survey in the various coalfields of India. Indeed, one of the very first and most important distinctions, that of the Talcher group, below the coal-bearing division, was made in this region, as already mentioned. The boundaries of the Mahādevas and Dāmodars, on the map in the *Memoirs of the Geological Survey of India*, are merely a rough approximation made from memory, and partly by guess, after quitting the field. The differences of the rocks have been noted in the field, but their area has not been mapped.

It is by no means improbable that the Dāmodar coal-bearing rocks will hereafter be found in portions of this area. Indeed, they have been observed at the village of Patraparā.

In the extreme west of the field, Talcher beds occur in the upper part of the valley of a stream tributary to the Tikariā,

near Dainchā, and also near Rāmpur, in Rairākhhol. In both cases, Mahādeva rocks appear to rest directly on them, without the intermediary of any Dāmodars.

Besides occupying the western part of the field, the Mahādevas are found in two places along the northern boundary, which is formed by a fault of considerable dimensions. One of these places is near the villages of Borāharnā and Dereng, where the upper beds occur in a narrow belt, five or six miles from east to west, their presence being marked by low hills of hard conglomerate. Further to the west, they recur in another isolated patch, forming the rise called Khandagiri hill. This hill consists of sandstone, capped by conglomerate, the pebbles from which weather out and cover the sides of the hill, concealing the sandstone beneath.

The northern part of the field in which these outliers of the Mahādevas occur is much cut up by faults, or, to speak more correctly, by branches of one great fault. These faults are in some places marked by a quartzose breccia, containing fragments of sandstone and other rocks. The vein of breccia varies in breadth. At the village of Karganj it is so largely developed that it forms a hill of considerable height. Between the branches of the fault, Talcher beds and metamorphics occur; north of all the faults, metamorphics only are found.

The eastern part of the field, from near Karganj on the Tikariā river, and Kānkurāi on the Tengrā, to the east of the Brāhmani, is principally composed of Dāmodar rock. These may usually be recognised by the occasional occurrence of blue and black shale, the latter carbonaceous, and sometimes containing coal. The general section of the beds is as follows:—

Interstratifications of blue and black shale, often very micaceous, with ironstone and coarse felspathic sandstone. These are at least 1,500 feet thick.

Carbonaceous shale and coal, about 150 feet.

Shale and coarse sandstone, the latter prevailing towards the base; thickness doubtful, but not less than 100 feet.

If this be correct, the coal only occurs upon one horizon. It is by no means impossible, however, that other beds may be found. Coal is known to be exposed in three places. The most westwardly of these is at Patraparā, in Angul, a village on the Meduliā Jor, a tributary of the Auli river. Here some six feet of carbonaceous shale and coal are seen on the banks of the stream, capped by clay, upon which rest the coarse grits of the Mahādeva group. The area occupied by the beds is small. The next place, which is far better known, is at Gopālprasad, in

Tāloher, on the Tengrā river. The rocks at this spot are nearly horizontal for a long distance, and the coal-bed extends for some miles along the banks of the stream, above the village. It also recurs lower down the stream. The thickness of the bed is considerable, but its quality is inferior, the greater portion being excessively shaly and impure. Selected specimens contain upwards of thirty per cent. of ash, but it by no means follows that better coal may not be found; and even the inferior fuel would be useful for many purposes, if any local demand existed; while from the horizontality of the beds, a large quantity might be procured with very little labour. The general dip in the neighbourhood is to the north; and any attempts at working the coal on a large scale, or further explorations by boring, should be made north of the Tengrā stream.

The third locality is in a small stream running into the Brāhmanī from the west, just north of the village of Tāloher. Beds lower than the coal are seen on the bank of the Brāhmanī, at the Chief's residence. The carbonaceous shale with coal is exposed about 400 yards from the river, in the small water-course. Only two or three feet are visible. The dip is north-west, and the coal is covered by micaceous, sandy, and shaly beds. A boring north-west of this spot would test the bed fairly.

There is another locality in which the section can be tested, at the village of Kankarāpāl, in Angul, about ten miles north-west of Gopālprasād. It is by no means certain that the Gopālprasād shale is close to the surface here; but the spot is the summit of an anticlinal, and some black shale seen in the stream resembles the uppermost portion of the rocks of Gopālprasād. It is highly probable that closer search will show other places where coal is exposed at the surface. The south-eastern part of the field consists of Tāloher beds, in which boulders are only occasionally found towards the base. They are micaceous near the village of Porongo. Above the silt-bed containing the boulders, there is a fine sandstone, frequently containing grains of undecomposed felspar. There is no chance of coal being found in this portion of the basin; that is, south of a line drawn from east by north to west by south, running about two miles south of Tāloher.

In several places in the Tāloher field, iron is worked. Sometimes the ironstones of the Dāmodar beds are used, but more frequently surface concretions, the supply of which is necessarily limited. Sometimes the little pisolitic nodules of the laterite are found washed from their matrix, and deposited in sufficient

quantities in alluvial formations to be worth collecting. *In one instance, the ore was derived from the metamorphic rocks, and brought from a distant locality. It resembled the mixture of peroxide of iron and quartz found at the outcrop of metallic lodes, and known as "gossan" in Cornwall. The method of smelting the iron in small furnaces is similar to that in use in other parts of India; but the bellows employed are worked with the foot, a peculiarity only found in the south-western dependencies of Bengal and Orissa.

The arenaceous ironstones of the Dāmodar group would, doubtless, yield a large supply of ore.

DHENKANAL AND HINDOL.—These regions require scarcely any notice. So far as is known, they consist of metamorphic rocks, except the western extremity of the first-named State, which comprises the eastern end of the Talcher basin. The metamorphic rocks are of the usual descriptions.

ATHGARH.—The northern and western parts of this State consist of metamorphic rocks. Along the Mahānadi, from near Outtack to the boundary of the State, within three or four miles of the village of Tigiriā, there is a belt four or five miles broad, of the same "Outtack sandstones" as are seen south of the Mahānadi, in Puri district,—being, in fact, a portion of the same basin. The rocks are precisely similar—coarse sandstone and conglomerate, with one or more bands of white clay.

GANGPUR.—Along the banks of the Koel river in the north-eastern portion of the State at a distance of about 8 miles from the railway station of Biserā on the Bengal-Nāgpur Railway lime-stone quarries are worked: lime of excellent quality is obtained and exported to Calcutta. Deposits of manganese are found in several parts of this State and two thousand tons were raised in 1907-08. These deposits are probably superficial replacement deposits on the Dhārwar series.

KALAHANDI.—Graphite of good quality is found in this State and occurs in biotite gneiss. Bauxite (aluminium) is found in Kalāhandi occurring in laterite and is a superficial deposit.

ATHMALLIK AND PATNA.—Graphite is found in Athmallik and Patnā. Nothing is known about its mode of occurrence in these States, but in all cases it is probably associated with archæan rocks.

The narrower valleys are often terraced for rice cultivation, and these rice-fields and their margins abound in marsh and water-plants. The surface of the plateau land between the valleys,

where level, is often bare and rocky, but where undulating, is usually clothed with a dense scrub-jungle in which *Dendrocalamus strictus* is prominent. The steep slopes of the hills are covered with a dense forest mixed with many climbers. *Sál* (*Shorea robusta*) is gregarious; and among the other noteworthy trees are species of *Buchanania*, *Semecarpus*, *Terminalia*, *Cedrela*, *Cassia*, *Butea*, *Bauhinia*, *Acacia*, and *Adina*, which are found also on the lower Himalayan slopes. Mixed with these, however, are a number of trees and shrubs, characteristic of Central India, such as *Cochlospermum*, *Soymida*, *Bowellia*, *Hardwickia* and *Bassia*, which do not cross the Gangetic plain.

The large area of the States of Orissa (28,125 square miles) **FAUNA.** is of one common physical aspect and the fauna are homogeneous.

The elephant (*Elephas Indicus*) however does not generally range south of the Mahānadi although fairly numerous in the central and north-eastern portion of the tract. A few stray occasionally across the Mahānadi into the State of Baud, but practically never move further south. In 1907 a few stray elephants appeared in the State of Kālāhandi for a few days and the occurrence was reported as most unusual and novel. The extensive and almost unpopulated tracts of the Simlāpāl in the State of Mayūrbhanj is a sanctuary for elephants and probably most of the elephants in Orissa frequent this magnificent elephant-forest at some time or other in the course of their existence.

Wild buffaloes (*Bos bubalis*) are now very rare. The wild buffalo was at one time quite plentiful in the Gāngpur State, along the valley of the Brāhmani and at Kumārkela some twelve miles west, but the advent of the railway proved his death-knell, and to-day there is not a single specimen left in Gāngpur or Bonai. In 1906 the sole survivor, a solitary bull, was killed by a villager in the north-east corner of Bonai. Occasionally a solitary buffalo crosses the border from Jashpur into Gāngpur.

Bison (*Gavaeus ganrus*) usually called *gayal* occur in the denser and remoter forests in every part of the States: they generally graze in close proximity to elephants often moving amongst a herd. They are numerous in the high hills of Kālāhandi.

The principal carnivora are the tiger, panther, hyæna, wild-dog, jackal and fox.

Tigers (*Felis tigris*) are found everywhere, and are very frequently destructive to human life. The great majority are game-killers. Some are cattle-killers and a few are man-eaters.

The native method for the destruction of man-eaters, which generally frequent a well defined tract, is to set traps in the form of a gigantic bow and arrow on the paths traversed by the man-eater. The arrow-heads are covered with a highly poisonous vegetable substance known as *mendhasinghā* : tigers are also killed by smearing this vegetable poison into the kill tied up. In tracts where timber cutting is in progress the number of persons killed is naturally large from the nature of the work, and the opportunities afforded for man-killing. Rewards are given for their destruction.

Panthers (*Felis pardus*) are very plentiful throughout all these States. The largest shot in these States of which there is an authentic record was 7 feet 2 inches measured along the curve of the back from the tip of the nose to the tip of the tail, soon after he was killed ; as a rule they seldom exceed $6\frac{1}{2}$ feet in length. They are mostly found in the small hills adjoining the cultivated area, where they levy toll from the flocks of goats and sheep. They are but rarely found in the largest and more extensive forests.

The *chitāh* (*Felis jubata*) or hunting leopard is not supposed to inhabit Bengal, but there are a few to be found in the west of the State of Gangpur in the Himgir zamindāri. Two have been shot in the Garjan hill in the north-west of that zamindāri and two more have been seen in south Himgir on the border of Kodābagā. A *chitāh* was shot in Pālkot in the Gumlā subdivision of the Ranchi district, which proves that though rare, they do exist in Bengal.

The *Felis Chaus* and *Felis bengalensis* are the only other members of the cat tribe met with in these States. They are fairly common and it is chiefly to them that the scarcity of ground game is attributed.

The large civet cat (*Viverra zibetha*) occurs in these States, but is not common.

The palm civet (*Paradozurus niger*) is fairly common, but is mostly found near villages where it is very destructive to poultry.

The common grey mongoose (*Herpestes pallidus*) is somewhat rare. It is seen occasionally in rocky hills in Gangpur ; it is larger than the common mongoose, rather more yellow in colour and has the tail tipped with black.

The jackal (*Canis aureus*) is found all over these States, but seems to avoid the heavy forests and chiefly inhabits the scrub-jungle near villages.

The common fox (*Ualpas bengalensis*) is met with ; it is common in the more open States but rare in the heavily wooded areas.

The *Sciurus maximus ear-bengalensis* is a very handsome squirrel and is common in all the dense forest areas. The colour is chiefly of a chestnut red above with the rump and tail black, the lower parts are buff. They are easily tamed and make very amusing pets. Their flesh is much appreciated by the forest tribes.

The common Indian ground-squirrel (*Citellus palmarum*) is fairly plentiful.

Pteromys cineraceus.—Although this variety of the large flying squirrel is supposed to be peculiar to Burmah, Mr. F. D. Whiffin has obtained several specimens in Gāngpur and Bonai and in each case the colour has been the same, ash coloured above and white on the belly. A specimen was sent by Mr. Whiffin to the Calcutta Museum in 1892. They are entirely nocturnal in their habits, and feed on fruits, nuts and insects, and breed in the holes of trees. With the parachute extended they have been seen to cover a flight of quite 100 yards.

The common Indian porcupine (*Hystrix leucura*) is met with in all the rocky hills in these States but being entirely nocturnal in its habits is seldom seen. Its food consists chiefly of roots.

The *Lepus ruficaudatus* is the only hare found and owing to the hilly nature of the country and the abundance of vermin it is not at all common.

Manis Brachyura.—This quaint beast, the manis or pangolin, although seldom seen, is found in these States. It lives in deep burrows and feeds chiefly on insects, its favourite diet being the white ant. They grow from 2 to 2½ feet in length and are covered with scales of a light olive colour.

The hyæna (*Hyæna striata*) is very common and is to be found over any carcase.

Wild dogs (*Canis rutilans*) are very numerous and extremely destructive to game: very interesting stories are told of the intelligence with which packs work together in hunting down a quarry: it is said they will pull down a bison. The larger variety appears to be most common, but villagers state that a very small light coloured variety or species exists. The larger species stands higher than a jackal and in the cold season has a bright chestnut brown coat: the ears are erect, the tail very bushy with a dark tip. The smaller variety has been reported from both Keonjhar and the Simlāpāl range near the Meghāsani hill in Mayūrbhanj. It is grey in colour. The larger variety is locally known as *kok* and the smaller as *baluā*: the smaller variety is said to be much the most destructive to game hunting in far larger packs than the *kok*.

The wolf exists but is very rare and found only in pairs: they may be seen occasionally in the Patnā State along the main road from Sambalpur to Bolāngir.

The common Indian sloth bear (*Ursus labiatus*) is found everywhere and is the only representative of the family. Although their favourite foods are the *mahuā* flowers (*Bassia latifolia*), berries and white ants, they do a great deal of mischief to sugarcane and maize, and now and again one develops carnivorous tendencies. They seldom attack people except when taken by surprise, yet as they are so numerous in the aggregate a great number of people are killed or injured by them. A she-bear with cubs is decidedly dangerous when taken by surprise or cowered.

The ratel or honey-badger (*Mellivora Indica*) seems to be closely allied to the above, so much so that in these parts it is generally called the *chhotā bhālu*. It is a small beast measuring about 3 feet, the upper part of the body being of an ashy-gray and the rest of it coal-black. It is found throughout these States, but being entirely nocturnal in its habits is seldom seen. It lives chiefly in rocky caves in the hills and its diet consists of lizards, insects and honey.

The sambar (*Rusa aristotelia*) is a forest-loving animal and generally frequents the high and most inaccessible hills. It is the largest of the Indian deer, and occurs all through these States. It is nocturnal in its habits grazing chiefly at night and returning to the hill tops during the day, where it generally rests in some shady spot during the heat of the day. The horns of the sambar in these States do not attain to the same dimensions as elsewhere.

The spotted deer (*Axis maculatus*) or *chithal* is common all over the States and is generally found in small herds in low-lying lands near water. They are gregarious in their habits and less nocturnal than the sambar, and care little for the neighbourhood of man. They are seldom found in the more hilly tracts.

The Indian mouse deer (*Mosmina Indica*), the smallest of its tribe, is found throughout the States, but owing to its diminutive size is seldom seen. It stands 10 to 12 inches at the withers and in colour is brown with white or buff spots and longitudinal stripes. It is locally known as *gurandi* and in Kālāhandi as *kebri*.

The muntjac (*Cervulus aurcus*) or rib faced deer (barking deer), although seldom seen, is often heard and is easily recognized by its dog-like bark and is common in the States.

The nilgai (*Portax pictus*) is found in all the less heavily wooded forest, where it feeds largely on wild berries, one of its favourites being the *aonla* (*Phyllanthus emblica*) which it devours in great quantities.

The occurrence of hog deer (*Cervus porcinus*) is doubtful.

The black buck antelope (*Antelope cervicapra*) only occurs in Kalāhandi and perhaps in Patnā in small numbers.

The four-horned antelope (*Tetracerus quadricornis*) is fairly common, the female and young male so resemble the barking deer that they are frequently mistaken for the latter animal. The horns of a good specimen shot in Bonai measured, anterior horns $1\frac{1}{2}$ inches, posterior horns $3\frac{1}{2}$ inches.

Pigs (*Sus Indicus*) are universal and destructive.

The monkeys (*Quadrumana*) in these States are restricted to two species only; the langur or hanumān (*Presbytes entellus*) and the small brow bandar (*Macacus rhesus*): of these, the former is most plentiful and is found distributed all over these States. Unlike his brother, in the more civilized and higher cultivated areas of India, he avoids the proximity of villages and keeps more to the hills and jungle, the reason for this probably being that he finds the forest tribes less sympathetic and hospitable in their treatment of him than their more civilized neighbours, the Hindus. Amongst their most deadly enemies are the Birhors, a wandering non-agricultural tribe who live chiefly on the animals they net, the chief amongst them being the unfortunate hanumān whose flesh they eat and whose skin is used for making the earthen drum called the *mandar*. The bandar is not so common as the hanumān, but is found scattered all over these States.

Pea-fowl are numerous and occasionally to a certain extent Birds. protected, not apparently from any religious feeling, but because they have been taken as the *santak* or emblem of some of the Chiefs.

Jungle-fowl and common spur-fowl are numerous. The painted spur-fowl occurs, but is uncommon. The partridge, black or grey, are comparatively rare. The great hornbill is often found in the forest tracts.

On the large and numerous irrigation dams to the south-west great flocks of geese, ducks and teal are found in the cold weather. The comb-duck (*Sarcidiorus melanotus*) breeds in the country and is found all along the Mahānadi river in suitable localities. The grey-duck (*Anas poecilorychus*) and pink-headed duck (*Rhodessa caryophyllacea*) both breed in the States, but the latter is rare. The two whistling-teal and the little cotton-teal are common residents.

The following are the wild fowl most commonly recognised in Orissa:—(a) Geese—(1) the lag or grey, (2) the barred-headed. (b) Duck—(1) comb—also known as the black-backed spur-geese; the local term is *naktā*, (2) gadwall or grey, (3) pin-tail,

(4) pochard—red-crested, (5) pochard—red-headed, (6) sheldrake, (7) sheldrake—ruddy, (8) shoveller, (9) spot-bill, and (10) widgeon. (c) Teal—(1) blue-winged, (2) common, (3) cotton, and (4) whistling. (d) Plover—(1) golden, (2) ringed, and (3) turnstone. (e) Snipe—(1) fan-tail, (2) jack, (3) painted, and (4) pin-tail.

Some flocks of the demoiselle crane frequent the neighbourhood of the Mahānadi and Tel rivers. Snipe, and grey and golden plover occur where the ground is suitable. The black imperial pigeon is found in places, while the ordinary green fruit-eating pigeon sometimes assembles in enormous flocks.

Croco-
diles.

Both the snub-nosed crocodile and the long-nosed fish-eating gharial are found in the rivers.

Snakes.

In addition to the usual snakes the hamadryad (*Oppiophagus elaps*) and some large pythons are occasionally found.

Fish.

The principal fish are rohi (*Labeo rohita*), mirkālī (*Cirrhua variegata*), bhākur (*Catla buehanani*), sāl (*Ophiocephalus marulius*), saul (*Ophiocephalus striatus*), boālī (*Wallago atte*), hilsā (*Olupea ilisha*), and numerous species of the carp and catfish families.

Mahsir occur occasionally in the upper waters of the Mahānadi and Brāhmanī and their affluents.

CLIMATE.

The climate of the States is very similar to that prevailing in the rest of Orissa, except that it is probably hotter in summer and colder in winter. The climate of the States which border on the Puri, Cuttack and Balasore districts is naturally moister than that of the States further inland, and the temperature is no doubt somewhat lowered by the moist cool breezes from the sea. In the States in the neighbourhood of Sambalpur a shade temperature of 111 to 112 degrees in May and June is not uncommon and not infrequently rises three or four degrees higher. No record of temperature, however, has been kept. The high plateau lands in the south-eastern area of the State of Kālāhandi attain an elevation of 4,000 to 4,100 feet and the climate is very pleasant even during the hottest months: the surrounding country, however, right up to the very edge of the plateau, is extremely malarious. There are several other high ranges, the most suitable of which, for a change from the heated atmosphere of the plains, are the Meghāsani range (3,824 feet) in Mayūrbhanj, Malayagiri (3,895 feet) in the State of Pāl Laharā and Gandhamardan (3,479 feet) in Keonjhar. In December and January the high grass is coated with thick rhyme in the plateau country of Kālāhandi and the western portion of the Patnā State and in the high lands of Bonai, Pāl Laharā and Keonjhar. A thermometer placed out on the open ground at Rāmpur, the

Tempera-
ture.

head-quarters of the Rāmpur-Thuāmūl samīndārī, of the Kālāhandi State, in the early part of January, recorded temperatures of 33 and 34 degrees at 6 o'clock in the morning. Owing to the presence of low hills and forests, the climate of the greater part of the States is unhealthy, especially during the rainy-season and the beginning of the cold weather, when malaria prevails. The principal cause of fever and bowel complaints is the bad water: in the hill tracts there are streams of crystal clear water, but deadly to drink, charged with the poison of decaying vegetation deposited in the deep pools along their course. The average annual rainfall during the last five years is 56·68 inches: the average main distribution is January to May 5·64 inches and June to October 48·59. Rainfall.

CHAPTER II.

HISTORY.

PREHIS-
TORIC
PERIOD.

THE States have no connected or authentic history. Comprising, as they do, the western and hilly portion of the Province of Orissa, they were never brought under the central Government, but from the earliest times consisted of numerous petty principalities which were more or less independent of one another. They were first inhabited by aboriginal races, chiefly Bhuiyās, Savars, Gonds and Khonds, who were divided into innumerable communal or tribal groups each under its own Chief or headman. They carried on incessant warfare with their neighbours on the one hand and the denizens of the forests on the other. In course of time their hill retreats were penetrated by Aryan adventurers, who, by reason of their superior prowess and intelligence, gradually overthrew the tribal Chiefs and established themselves in their place. Tradition relates how these daring interlopers, most of whom were Rājputs from the north, came to Puri on pilgrimage and remained behind to found kingdoms and dynasties.

MEDIE-
VAL
PERIOD.

It was thus that the founder of the present Rāj family of the Patnā State 600 years ago set up his sway over a cluster of States known as the Athara Garhjāts or 18 forts: according to tradition this ancestor was a Chauhān Rājput Chief living near Mainpuri, and expelled from his territories by the Muhammadans: this family settled down in Patnā and quickly extended its power, till finally the whole of the country which is now the Sambalpur district and the adjoining States of Sonpur and Bāmra, the Chiefs of which were made tributaries, fell under its sway. The area under the sway of this family was divided up between two brothers: from this division originated the supremacy of the brother who received Sambalpur as his portion: Patnā rapidly became a dependency of the Chief of the Sambalpur State which had grown the most powerful of all the cluster of Garhjāt States. The State of Sambalpur fell before the Marāthās, and with it Patnā. Jai Singh became ruler of Mayūrbhanj over 1,300 years ago, and was succeeded by his eldest son, while his second son seized Keonjhar. The Chiefs of Baud and Daspallā are said to be

descended from the same stock, and a Rājput origin is also claimed by the Rājās of Athmallik, Narsinghpur, Pal Laharā, Talcher and Tigiriā. Nayāgarh, it is alleged, was founded by a Rājput from Rewah, and a scion of the same family was the ancestor of the present house of Khandparā. On the other hand, the Chiefs of a few States, such as Athgarh, Barāmbā and Dhenkānāl, owe their origin to distinguished servants of the ruling sovereigns of Orissa. The State of Ranpur is alleged to be the most ancient, the list of its Chiefs being said to cover a period of over 3,600 years. This family furnishes the only known instance in which, amidst many vicissitudes, the supremacy of the original settlers has remained intact. The States acknowledged the suzerainty of the paramount power and were under an implied obligation to render assistance in resisting invaders, but in other respects neither the ancient kings of Orissa nor their successors, the Mughals and Marāthās, ever interfered with their internal administration. All the States have annals of the dynasties that have ruled over them, but they are made up in most part of legend and fiction and long genealogical tables of doubtful accuracy, and contain very few features of general interest. The salient features in the particular history of each State have been mentioned in the separate articles on each of the States. Within its rugged barriers, each State was thus permitted to work out its own growth, its boundaries expanding or contracting according to the strength or weakness of its Chief, the jealousies of its neighbours and final appeal for help to the sovereign power preventing its total extinction at any time.

The valley of the Mahānadi formed the high road from the west, and it is thought that the Yavanas who were finally expelled from Orissa by Yayāti Kesari, the first king of the Lion dynasty, in A. D. 474, and whom Sir William Hunter identifies with the Ionians, escaped to the Central India plateau through that route. Orissa under the Lion line (474-1132 A. D.) did not extend inland beyond Dhenkānāl and can hardly be said to include the group of States formerly known as the Tributary Mahāls of Orissa. The princes* of the Gangetic line pushed their territory inland to Baud which still continues the westernmost of the States formerly known as the Orissa Tributary Mahāls. It is said that the third monarch of the line, between 1175 and 1202, measured his kingdom from the Hooghly to the Godāvari and from the sea to the frontier of Sonpur, the State, which adjoins Baud on the west.

* Hunter's *Orissa*, Vol. I, pp. 317 and 318.

BRITISH
CONQUEST.

The British conquest of Orissa from the Marāthās took place in 1803, and was immediately followed by the submission of 10 of the States, the Chiefs of which were the first to enter into treaty engagements. Meanwhile, Major Forbes penetrated through the hilly and jungly country on the west and reached the famous Barmūl pass in Daspallā, the key to Berār and the Central Provinces. Here the Marāthās made a last stand, but on the 2nd November the pass was forced and the enemy fled in confusion. The Rājā of Baud and others hastened to tender their submission. Including Khurdā, the States were then 20 in number. In the following year the Chief of Khurdā rebelled, was vanquished and forfeited his State, which is now a Government estate and is administered as a subdivision of the Puri district. The Rājā of Bānki was deposed in 1840 for murder, and his State, which escheated to Government, has since been added to the district of Cuttaek. In 1847 Angul was annexed on account of the misconduct of its Chief, who was found to be preparing to wage war against Government and to countenance those who opposed the officers of Government employed in suppressing Mariāh or human sacrifice among the Khonds in Baud. The large tract known as the Khondmals with an area of 800 square miles, which professed a shadowy allegiance to the State of Baud came under British influence in 1855-56, when the Chief of that State made over the Khondmals to British administration, being himself powerless to suppress the practice of Mariāh and to bring under subjection the refractory Khonds who had taken the side of the notorious Gumsur rebel Chakra Bisoi. Since then it has remained under British control, and in 1891 was formed into a subdivision of the scheduled district of Angul. Athmallik was a tributary of Baud and Pāl Laharā of Keonjhar, and they find no mention in the earlier treaty engagements. They were both recognised as separate States in the *sanads* of 1874, which at the same time conferred the hereditary title of Rājā on their Chiefs.

The 17 States named in the margin were variously known as

1 Athgarh	9 Ranpur
2 Barāmū	10 Tāloher
3 Dhenkūzāl	11 Tigriā
4 Hindol	12 Baud
5 Khandparā	13 Daspallā
6 Narsinghpur	14 Keonjhar
7 Nayāgarh	15 Mayūrbhanj
8 Nūlgiri	16 Athmallik
17 Pāl Laharā	

the Tributary States, Tributary Mahāls or the Garhjāts of Orissa. Treaty engagements were exchanged with the first eleven States in 1803, immediately after the British occupation. After Major Forbes'

success at Barmūl the Chiefs of Baud and Daspallā submitted and treaty engagements were entered into with them as well as with most of the remaining Chiefs in 1804.

This group of 17 States or Tributary Mahāls of Orissa referred to above were ceded with the rest of Orissa by the Marāthās to the British Government on the conquest of Orissa in 1803-04, and it is with this year that the history of the dealings of the British Government with the States commences, but as they had never been regular districts, but rather Tributary States of the Native Governments, they were exempted from the operation of the general Regulation system prevailing in the British Provinces by sections 36, 13 and 11 respectively of Regulations XII, XIII and XIV of 1805. Engagements were entered into by all the Chiefs, binding themselves to maintain submission and loyalty to the East India Company's Government, and to pay an annual *peshkash* or tribute. All the Chiefs, except Keonjhar, are also bound under these engagements to depute a contingent force to assist Government against any opposition, the force to receive only rations from Government. In 1804 the Judge and Magistrate of Cuttack had certain jurisdiction in these States; but in 1814 he was superseded by a Superintendent, 'appointed and directed to endeavour to establish such a control over the conduct of the Rājās, as would prevent the commission of crimes and outrages.'

The Chiefs administered civil and criminal justice under the control of the Commissioner of the Orissa Division, as Superintendent of the States. Heinous offences which required more than two years' imprisonment, and all capital cases were sent to this officer, who also decided political causes and disputed successions. An appeal from his decision lay to the Government of Bengal. The Magistrates of Puri, Cuttack and Balasore were *ex-officio* Assistants to the Superintendent; but, with the exception of the Magistrate of Balasore, they did not ordinarily exercise criminal jurisdiction. The Superintendent had also an Assistant, who exercised the full powers of a Magistrate, and who tried such cases as the Superintendent made over to him. The States, during the minority of the Rājās or Chiefs, or when for political reasons they were placed under attachment, were managed by the Superintendent through a Government receiver (*Tahsildar*). The jurisdiction of the Superintendent was defined by Regulation XI of 1816 and Act XXI of 1850.

In 1821 the Government ruled that the interference of the Superintendent should be chiefly confined to matters of a political nature: to the suppression of feuds and animosities prevailing between the Rājās of adjoining States, or between the Rājās and their subordinate feudatories; to the correction of systematic oppression and cruelty practised by any of the Rājās or by their

JURISDICTION.
Cuttack
States.

officers towards the inhabitants; to the cognisance of any apparent gross violation by them of their duties of allegiance and subordination; and generally, to important points, which, if not attended to, might lead to violent and general outrage and confusion, or to contempt of the paramount authority of the British Government.

In 1839 suggestions were made for the introduction of a regular system of management, but the rules proposed were not approved. Instructions were, however, given to draw up some short, clear and well-defined regulations, making the Rājās responsible to the Superintendent in all cases of murder, homicide and heinous offences, without, however, interfering so far as to make them amenable to the Civil Court of the Superintendent in cases between the Rājās and their creditors. Rules were accordingly drawn up proposing that the Rājās should be prohibited from exercising the powers of life and death; from subjecting any offender to torture, mutilation, or other punishment opposed to the principles of British rule; and from allowing the practice of widow-burning and human sacrifices within their territories; that they should be made liable to punishment for murder, or other heinous offences committed by them, and should be held responsible for the amount of property robbed from travellers, if the commission of the crime and the non-recovery of the property were due to their imperfect police or want of care; that the Superintendent's power of interference should be increased, so as to take cognizance of offences committed by foreigners in the Tributary States, to hold preliminary inquiries in heinous offences committed by the Rājās, and to sentence all offenders except the Rājās to imprisonment for a term not exceeding seven years; that the punishment of the Rājās, and all punishments exceeding seven years, should be awarded by the Government of Bengal. The Bengal Government, however, thought it better not to pass any permanent or defined rules upon the subject; but directed that the spirit of the proposed rules should be acted up to in all future cases, with certain limitations, and that the Rājās should be informed that they are ordinarily amenable to the Superintendent's Court, subject to such instructions as may from time to time be furnished by the Government. These were the orders of 1840; and all sentences of more than seven years' imprisonment, although passed by the Superintendent, had then to be reported to Government for confirmation. In 1850 Act XX was enacted for settling the boundaries of these States. In 1858, the system of trying petty criminal cases *ried voce* was extended to the States.

The Penal Code was declared applicable to these States by an order of Government in December 1860, and in 1863. Under orders of Government the criminal authorities were directed to be guided in their proceedings as closely as possible by the spirit of the Criminal Procedure Code. Section 13 of Regulation XIII of 1805, and as regards the States under the Rājās, the proviso contained in Section 11, Regulation XIV of 1805, are still in force.

In 1862 adoption *sanads* were granted to the Chiefs by Lord Canning. The relations between the British Government and the Orissa Mahāls are defined in the treaties and engagements with the Chiefs as detailed in Aitchison's *Treaties*. Questions of inheritance and succession are decided by Regulation XI of 1816. In 1882 the Calcutta High Court ruled that the Tributary Mahāls of Orissa did not form part of British India. The decision was accepted as final by the Secretary of State, and a special Act, called the Tributary Mahāls of Orissa Act, XI of 1893, was passed to indemnify certain persons and to validate acts done by them in the Mahāls, and to admit of certain sentences passed there being carried into effect in British India. *Sanads* were granted to the Chiefs in 1894 defining their relations with the British Government and these *sanads* were revised in 1908.

The Chotā Nāgpur Mahāls, to which the States of Gāngpur and Bonai belong, were acquired by cession from the Marāthās; ^{Chotā Nāgpur States.} their position was only that of zamindārs paying tribute, who were allowed certain powers of internal administration, liable to reduction or abolition at any time. The States of Chotā Nāgpur belong politically to two clusters of States known as the Sambalpur and Sirguja groups, each of which was once linked together by some sort of feudal tie.

The southern or Sambalpur group comprised Gāngpur, Bonai and other States now in the Central Provinces. In 1818 these States reverted to the British Government under a provisional agreement with Mādhujī Bhonālā (Appā Sāhib). They were finally ceded in 1826. On the cession of these States in 1818, the feudal supremacy of the Rājā of Sambalpur was annulled. In 1821 the tribute payable was fixed on a lower scale than had been levied by the Marāthās. Up to 1860 the Sambalpur States were administered from Rānchi by the Agent to the Governor-General on the South-West Frontier.

Under the rough military rule of the Bhonālā dynasty of Nāgpur the position of the Chiefs was of necessity uncertain and fluctuating. At one time they were held in some check by a strong local governor, and at another left in almost complete

independence. The British Government adhered to the latter policy, and from the first declined to lay down any definite rules for the guidance of the Chiefs. Only the general line of policy was indicated. Separate engagements were taken from each Chief, binding him to the right administration of the judicial and police powers entrusted to him. In 1823 it was laid down that no sentence of death or of imprisonment extending beyond seven years, should be passed or executed, without the previous sanction of the Agent. Precise rules for the guidance of the Chiefs in the administration of criminal justice and in the exercise of their police functions, were first promulgated in 1863.

There is a considerable difference between the position of the Chotā Nāgpur Mahāls and the Orissa Mahāls. With the former, treaties were entered into, but the latter only received engagements specifying the conditions on which their lands were settled with them. They were granted *sanads* in 1899, and in the case of Gāngpur and Bonai revised *sanads* were granted in 1905, bringing them within the Orissa Division.

Central
Provinces
States.

As regards the five States, Patnā, Kalāhandi, Sonpur, Bāmra, Rairākhhol, transferred from the Central Provinces to Orissa in 1905, the position of the States and zamindārs in the Central Provinces was the subject of enquiry in 1863. The States of Patnā, Sonpur, Bāmra, and Rairākhhol formed a group known as the Sambalpur Garhjāts; Kalāhandi or Karond did not originally form one of the Garhjāts and was grouped with the tenures known as the Nāgpur zamindāris. The exact origin of the tenure of the Sambalpur Garhjāt Chiefs is unknown, but is certainly very ancient; they were, as already stated, first independent, then held in subordination to the most powerful, the Mahārāja of Patnā, who afterwards had to yield supremacy to the Mahārāja of Sambalpur, till all fell under the Marāthās in A. D. 1755 as tributaries. When they came under British rule, this dependence was cancelled in 1821, and separate *sanads* were granted. The Nāgpur zamindārs, in which group Kalāhandi was included, were, notwithstanding their official authority and administrative influence, dependent on, and subject to, the Government of the day, and this dependence was real under the Marāthā Government. Adoption *sanads* were granted to Karond or Kalābandi in 1862, Bāmra, Patnā and Sonpur in 1865, and Rairākhhol in 1866. In 1867 *sanads* were granted to these five States giving them powers of life and death subject to confirmation of an officer of the British Government. In 1905 revised *sanads* were granted to these Chiefs in accordance with the territorial change bringing them within the Province of Orissa.

It is the *sanads* which now define the status and position of *Sanads*. all the States with reference to the British Government: and it has been accepted now that the States do not form part of British India. The Tributary Mahāls of Orissa received their *sanads* in 1894, the Tributary and Political States of Chotā Nāgpur in 1875-76 and which were reissued in 1899 and the five States noted above in the year 1867. In the *sanads* of 1894 and 1899 the Chiefs of the Orissa, and Chotā Nāgpur Mahāls are termed Feudatory Chiefs. In 1908 revised *sanads* were granted to the States formerly known as the Tributary Mahāls of Orissa. In the *sanads* granted in 1867 to the States transferred from the Central Provinces it is stated, with the exception of the Kalāhandi State, which did not originally form one of the Garhjāt States, that whereas these Chiefs were formerly Tributary Chiefs of a Garhjāt State they have been recognised as Feudatories.

The tribute payable in the case of the States constituting the group formerly known as the Orissa Tributary Mahāls is fixed, but that payable by the five States transferred from the Central Provinces and by the States of Gāngpur and Bonai is liable to revision. Of the States comprising the group formerly known as the Orissa Tributary Mahāls only the States of Athmallik, Baud, Mayūrbhanj, Pāl Lahara are bound to pay *nazarāna* or succession fees: the five States transferred from the Central Provinces and the States of Gāngpur and Bonai are all bound to pay *nazarāna*. Tribute and, *nazarāna*.

The States of Orissa as now constituted formerly consisted of three groups: the largest group is that formerly known as the Tributary Mahāls or Garhjāts, consisting of 17 States, which, since the conquest of Orissa, have been attached to the Orissa Division and whose dealings have always been with the Commissioner of Orissa at Cuttack: two of these States, Baud and Athmallik, however, for a time formed part of the South-West Frontier Agency with headquarters at Ranchi, but subsequently, on 11th April 1837, were handed over to Orissa. In October 1905, the five Oriyā-speaking States of Patnā, Kalāhandi, Sonpur, Bāmra and Rairākhhol were transferred to the Orissa Division, from the Central Provinces and at the same time the two States of Gāngpur and Bonai from the Chotā Nāgpur Division. The States thus incorporated in the Division of Orissa now number twenty-four, and all the Oriyā-speaking States are now in one Division. Simultaneously with this amalgamation of the Oriyā States a Political Agent was appointed to assist the Chiefs. The amalgamated group of States are now known as the Feudatory States of Orissa. FORMA-
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STATES.

ABORIGINAL.
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The States are by no means rich in archæological remains. The aboriginal tribes, who were the first occupants of the soil, and who are still found in considerable numbers, and the Aryan settlers who founded the various principalities, were too occupied in keeping order within and repelling the attacks of neighbours, to be able to devote much time to architecture. Owing to the precarious nature of their environments and the necessity of shifting their residences from place to place, no Chief ever thought of building a permanent dwelling-house, and till lately their palaces were mere wooden structures nestling invariably under a hill where refuge was sought when hard pressed below. There was a general absence also of stone temples upon which the Hindu sovereigns of Orissa lavished so much of their revenues. Fetichism was the earliest form of worship in the Garhjāts, and stones and trees dyed with vermilion constituted the main objects of adoration. They survive to this day as village gods and are propitiated by Aryans and non-Aryans alike, while in those tracts like the Bhuiyā pārs in Keonjhar and the Khondmāls, where the aboriginal races preponderate, hardly any other objects of worship are ever met with. In Keonjhar, a Khond priest is still permitted as a relic of the past to perform rites to a rough hewn stone inside the Chief's house, although the ruling family has long since been converted to Vaishnavism. Very little trace of Buddhism has been found in the States. In Dhenkānāl and Barāmbā there are a few families of Saraks who are weavers by profession and who follow a religion which strongly resembles Buddhism. But tradition relates that the name of Baud, the most westerly State in the Mahānadi valley, was derived from some early settlers who professed the Buddhist faith. It is possible that the Buddhist Javanas in their flight to Central India halted in Baud, as its open fertile country watered by the great river and its tributaries and separated from the coast by miles of rugged hills would naturally afford the first resting place to the fugitives. Several images of Buddha have also been found in different parts of this State.

Of Saivism, the next phase of religious belief in Orissa, there is ample evidence all throughout the Garhjāts. There is no village of any pretensions, no island rock, no site marked by natural beauty or having a commanding position, especially along the courses of the chief rivers, which does not boast of a shrine containing the mystic symbol of the all-destroyer.

Originally the temples like the houses of the Chiefs were mere mud huts, though some of them were subsequently replaced by more substantial buildings made of stone, and in a very few

cases of burnt bricks. As in Bhubaneswar, the chief centre of Saivism in Orissa, the officiating priests are non-Brahmans and belong to the Māli caste which is believed to be of non-Aryan origin. The priests of the village gods and deities are invariably of an aboriginal race: they carry on their worship to the sylvan gods side by side with the orthodox Hindu worship in the village. One of the most important functions of these priests is to know and guard the village boundaries and they are also supposed to possess the power of exorcism and by spell and hypnotism (*guni*) to throw their victims into a trance and elicit the desired information from them. From these facts and from the presence of Sāsani Brāhman in all the States, who without exception still profess Saivism, it may be inferred that it was during the time of the Lāo dynasty (474—1132 A.D.) that the Aryan colonization of the Garhjāts occurred. The family annals of the Chiefs also point to the same conclusion. The oldest remains thus date back no earlier than the Saivie era.

The remains at Khiching are of considerable magnitude and consist of statues, pillars, mounds and ruins of several temples of stone and of bricks. The bricks measure 12 inches by 9 inches by 3 inches. The main group is thus described by Mr. Beglar:—

“But the great group near the village is one of the greatest interest and antiquity. One of the temples here faces south-east and is Saivie, enshrining his emblem, it is in the Barākar style, but the lower part of the tower is sculptured, while the upper part is quite plain, showing that at some period subsequent to its erection, it had been repaired. For reasons detailed in my report for season 1872-73, I ascribe the repairs to Rājā Mān Singh's time. Another of the temples is an unfinished one: it is roofed in the overlapping octagonal style, a style from which I infer the date of its erection to have been the 16th century, or Rājā Mān Singh's time, and I have no doubt the builder of this was also the repairer of the last one. Rājā Mān Singh is the only prominent figure in the local history of the district to whom I can reasonably attribute its erection. From an examination of the upper part of this unfinished temple, it is clear that each course of stone as laid down was then and there cut and smoothed *in situ*, that is, after being placed in the position it occupies; the stones for the outer facing of the various courses were left somewhat larger than needed to allow of the final cutting and trimming *in situ*.”

Of the Baud temples, he says:—“Going now northwards through the unrivalled scenery of the Karmingā Ghat and the Khond country, we arrive at Baud, on the south bank of the Mahānadi, here are a number of small but exquisitely finished temples, the

existing ones are all in one group within an inclosure. Contrary to the usual bigoted habits of the Oriyā Brāhmana, access to the courtyard of the temple is not denied. The principal shrine is a comparatively modern erection, well plastered over, consisting of a sanctum, a Mahāmandapa and a portico, in short it is a complete temple and possibly is only an ancient one repaired; it is dedicated to Rāmeswara, faces east, and is surrounded by no less than nine small shrines, all in decay and all of about the same age.

"Besides this great shrine, there are three smaller isolated temples, which have not been covered with plaster or repaired and which, therefore, now stand with all the beauty of their elaborate carving; so hard and durable is the stone, that the carvings appear nearly as sharp as the day they were executed, the colour too, a deep purplish red, adds in no small degree to the beauty. Each of these temples stands by itself on a raised platform, and each consists of a cell and its attached portico only. . . . but I cannot do justice to the elaborate carving which literally covers the temple from crown to base without the aid of the photographs of the temple. One faces west and two face east; they have all a group of the Nabagrahas over the entrance and as they are considered subordinate in sanctity to the great temple of Rāmeswara, I was allowed to approach and take a plan of one of them. These temples are planned on the principle of intersecting squares laid down by Fergusson as the most common type of the plan of mediæval temples in India. Really this form of intersecting squares is very rare, as may be seen on comparison of such plans as had yet been obtained, they are certainly extremely beautiful, and though small, they are gems of art in their own humble way. I cannot assign to them any great age, the ninth century is the earliest which may safely be assigned to them, and when we remember that most of the temples of Orissa (some of them inscribed and, therefore, not uncertain in date) are of this period and show a remarkable predilection for the Nabagraha, I think there will be no reasonable doubt in assigning this to that period also, an age not inconsistent with the elaborate and profuse minute ornamentation bestowed on them, or the general outline and disposition of the plan and facade."

Of later discoveries there was one of much importance made by Mr. K. G. Gupta (the then Commissioner of Orissa) in Narainghpur in February 1902. There is a picturesque hillock named Bāneshwar-nāsi in the bed of the Mahānadi about 10 miles to the south-east of the headquarters of the State. Amidst the ruins of a brick temple on a ledge on the east face of the

rock, several feet from the foot of the hill was found a sculpture half buried in the ground. It is carved on a slab of hard red sandstone 5' 2" long and 2' 6" broad, and consists of a central female figure, most exquisitely finished and one of the finest specimens of the kind to be met with in Orissa. But the point of most interest is, that while the main figure is obviously that of a Hindu deity, probably Lakshmi or goddess of fortune, it is surmounted by five small images of Buddha, symmetrically arranged, two above each shoulder and the fifth just over the head. Two small female figures, wearing what looks very much like boots, crown the top corners and are meant to represent the Buddhist symbol of Swastika. The main figure has large meditative eyes so characteristic of Buddhist images. The work evidently belongs to the transition period when Hinduism was regaining ascendancy, and Buddhism, though on the wane, had not altogether lost its influence. But judging by its perfect style, it must have been executed when stone sculpture had attained its greatest development in Orissa, which certainly was not the case earlier than the 9th century, if not later. The revival of Hinduism is contemporaneous with the establishment of the Lion line in 474 A.D. It is, therefore, certain that Buddhism lingered on in Orissa for several centuries after it had ceased to be the dominant religion. A little higher up on the same hill are the remains of a stone Saiva temple, the lower portions of the walls of which are still standing. There is a fine chlorite lingam inside, which is still worshipped, and another small lingam, also of chlorite, a little to the west. A figure in many respects similar to the one already described, also carved on a slab of red sandstone, rests against the broken north wall of the temple. There are, however, no figures of Buddha, nor any symbol of his faith. The villagers apparently worship it, and it is painted over with oil and vermillion.

In the adjoining State of Barāmbā, in a romantic islet in the bed of the Mahānadi, about three miles to the south-east of the headquarters of the State, there stands an old temple dedicated to Sinhanāth, a name of Siva. It has the four main divisions, viz., sanctuary, *jagamohana*, *nātmandir* and *bhogamandapa* and is surrounded by a cluster of smaller shrines. The sanctuary is elaborately carved outside, but being thickly plastered over at a later date, the figures are only visible where the plaster has fallen off. The stone used is the soft red sandstone which is so largely in evidence at Bhubaneswar and the carvings are gradually wearing off. Vaishnavism, which in its present form spread in Orissa with the advent of the Gangetic dynasty in the 12th

century and is the prevailing religion to this day, cannot obviously boast of any remains of antiquarian interest. The principal village of each State has one or more stone temples dedicated to Vishnu in his popular form of Jagannāth and his two companions, Balabhadra and Subhadra, but the buildings are all recent and the sculptures, wherever they exist, partake of the grosser degeneracy of later times.

Relics of an older civilisation are found in the site of the Sonpur town in the State of that name. Tradition is that about 1,000 years ago the town of Sonpur was a place of considerable size and importance, consisting of over 50,000 houses. The tradition is supported by the discovery, on the site of the present town, and within a distance of two or three miles, of relics of old masonry houses, temples, images, ornaments, gold coins and the old-fashioned wells, known as *nanda* and built by that sect of Brāhmanas with big tiles: copperplate inscriptions of grants to Brāhmanas (*tambā sāsana*) have also been found in this State; the inscriptions are in Sanskrit written in the Kutila character: these probably belong to the era of the Gupta Rājas of Orissa. In the State of Patnā five copperplate inscriptions of considerable interest have also been found: they are in the Kutila form of the Nāgari character and the language is Sanskrit. These were charters granted by the Somavansi Kings and with five other similar charters found near Cuttack are the only records possessed of this dynasty. The charters are land grants in the different districts of Kosala country, identifiable with the south-eastern parts of the Central Provinces. From the charters it would appear that this dynasty held sway on the banks of the Tel and Aug rivers and that the Patnā State formed part of their kingdom. A detailed account of these charters will be found in Volume I, 1905, of *The Journal of the Asiatic Society of Bengal*.

CHAPTER III.

THE PEOPLE.

In 1860-62 an estimate was prepared by the Topographical Survey of the number of villages in the States of Orissa and Chota Nāgpur and a calculation of five and a half persons to each house was taken as representing the population: a similar calculation was made in 1863 for the five States recently transferred from the Central Provinces to the Orissa Division. The first enumeration of the population of the States was taken in 1872: this census disclosed a total population of 1,631,273 with an average density of 58 persons to the square mile: in 1881 the population had increased by 41 per cent. amounting to 2,302,422, the pressure of the population on the soil being 82 persons to the square mile. In 1891 the results of the census disclosed a population of 2,898,709 or 26 per cent. increase over the recorded population in 1881, and the average density had increased to 103 persons per square mile. In the last census of 1901 the total population was returned at 3,173,395 or an increase of 9·5 per cent. since 1891, and the average density was 113 persons to the square mile. According to these statistics the population has increased by 1,542,122 since 1872 or an increase of 94 per cent. The earlier enumerations were no doubt defective, and the large increases shown by each successive census are due in a great measure to improvements in the arrangements for counting the people. At the same time there has undoubtedly been a considerable growth in the population. There is ample room for expansion and the people are hardy and prolific. There has undoubtedly been a large extension of cultivation since 1901 due to the great improvements in communications, light rents and the large profits to be made by agriculturists who are now, owing to the advent of the Bengal-Nāgpur Railway through Gāngpur and Bāmra and the East Coast Section of the same railway, enabled to obtain a highly profitable market for their produce.

Census of 1881. The census of 1881 showed that the population of the State of Patnā had increased by 162 per cent. since 1872 and that of Kalāhandi, Bāmra, Nilgiri, Athmallik, Mayūrbhanj and Gangpur by 68·2, 51·6, 50·2, 49·8, 49·1 and 46·6 per cent. respectively : in the States of Bonai, Pāl Laharā and Tālcher there was a slight decrease.

Census of 1891. Of the total increase shown by this enumeration since 1881 the States of Gangpur, Kalāhandi, Mayūrbhanj and Patnā accounted for more than half or 69 per cent. : the increase being Gangpur 14 per cent., Kalāhandi 18 per cent., Mayūrbhanj 25 per cent. and Patnā 12 per cent. The State of Khandparā showed a slight decrease.

Census of 1901. In the year 1900 there occurred disastrous floods of the Mahānadi and Brāhmanī and famine in the States of Baud, Patnā and Sonpur. There was nevertheless a substantial increase in the population in spite of a loss of 1·4 per cent. in Baud, 16·4 per cent. in Patnā and 13 per cent. in Sonpur. Of the net increase the States of Dhenkānāl, Gangpur, Kalāhandi, Keonjhar, Mayūrbhanj and Nayāgarh account for 89·5 per cent. : the respective increases were Dhenkānāl 12·89 per cent., Gangpur 17·28 per cent., Kalāhandi 8·82 per cent., Keonjhar 13·10 per cent., Mayūrbhanj 28·45 per cent. and Nayāgarh 8·34 per cent. The greatest increase in the decade ending in 1901 took place in the sparsely inhabited States of Rairākhōl and Athmallik, the latter of which gained by immigration from Baud and the Central Provinces : the gain in Gangpur and Hindol was due to new settlers. The comparatively slow rate of increase in Tigiriā and Khandparā is explained by the fact that the population of these States is already denser than it is elsewhere. The only States which suffered a loss of population were Baud, Patnā and Sonpur as noted above : the State of Baud suffered much from epidemic disease and general unhealthiness, and many of the restless Khond inhabitants emigrated during the scarcity of 1900. In Patnā and Sonpur there was famine in the same year. As a general rule, the growth of the population has been greatest along the borders of the British districts of Cuttack, Balasore and Puri, where the country is comparatively level, and the proportion of arable land relatively high. The volume of immigration is very considerable, and the census of 1901 showed for the group of 17 States, formerly known as the Tributary Mahāls of Orissa, a net gain of 61,000 persons from contiguous territory in Bengal and 7,000 from the Central Provinces. The total population according to the census of 1901 was 3,173,895.